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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,379	09/10/2003	Paul Rudkin	066455-228	3328

7590 07/18/2007
DYKEMA GOSSETT PLLC
Third Floor West
1300 I Street, N.W.
Washington, DC 20005

EXAMINER

GHEBRETINSAE, TEMESGHEN

ART UNIT	PAPER NUMBER
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2611

MAIL DATE	DELIVERY MODE
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07/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/658,379	Applicant(s) RUDKIN, PAUL	
	Examiner Temesghen Ghebretinsae	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,8,9 and 19 is/are rejected.
- 7) ☒ Claim(s) 2-7,10-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. It would be of great assistance to the Office if all incoming papers pertaining to a filed application carried the following items:

1. Application number (checked for accuracy, including series code and serial no.).
2. Group art unit number (copied from most recent Office communication).
3. Filing date.
4. Name of the examiner who prepared the most recent Office action.
5. Title of invention.
6. Confirmation number (See MPEP § 503).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1,8,9,19 are rejected under 35 U.S.C. 102(a) as being anticipated by Suzuki et al (EP0738064).

4. Suzuki discloses a method for demodulating at least one of a received phase and amplitude modulated signal comprising: deriving from the received signal a first sequence samples representative of the phase of the received signal; deriving from the received signal a second sequence of samples representative of the received signal envelope; (see page 6, lines 31-37; page 7)

“According to the present invention, furthermore, a demodulator includes an amplitude and absolute phase detection unit for detecting an instantaneous envelop level in a signal space and an absolute phase in the signal space of a received signal, a n-symbol delay unit for providing an instantaneous envelope level of the received signal at n symbols previously in time (n is a natural number), an amplitude ratio calculation unit for calculating an amplitude ratio of an instantaneous amplitude in a signal space and an

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instantaneous amplitude in the signal space n symbols previously in time from the instantaneous envelope level and the instantaneous envelope level at n symbols previously, and a decision unit for deciding a code transmitted in accordance with the absolute phase and the calculated amplitude ratio."

combining respective ones of the first sequence of samples and said second sequence of samples to output a composite sequence of samples representative of the received signal ; the composite sequence characterizing phase variations and amplitude variations of the received signal and demodulating the composite sequence samples; (see page 7, lines 9-13 and page 8, lines 10-26)

"According to the present invention, furthermore, a demodulator includes an amplitude and phase detection unit for detecting an instantaneous envelope level in a signal space and an instantaneous phase in the signal space of a received signal, a first n -symbol delay unit for providing an instantaneous phase at n symbols previously in time (n is a natural number), a phase difference calculation unit for calculating a phase difference between the detected instantaneous phase and the provided instantaneous phase n symbols previously, a second n -symbol delay unit for providing an instantaneous envelope level of the received signal at n symbols previously in time, an amplitude ratio calculation unit for calculating an amplitude ratio of an instantaneous amplitude in a signal space and an instantaneous amplitude in the signal space n symbols previously in time from the instantaneous envelope level and the instantaneous envelope level at n symbols previously, **and a decision unit for deciding a code transmitted in accordance with the calculated phase difference and the calculated amplitude ratio.**"

(The first sequence of samples and the second sequence of samples are combined by the decision unit 2704 and 3104 and the combined sequences are demodulated . the combined envelop level and phase level are used to decide the transmitted code

" decision unit for deciding a code transmitted in accordance with the calculated phase difference and the calculated amplitude ration")

"It is preferred that the amplitude and phase detection unit includes a plurality of amplitude and phase detection circuits for detecting a plurality of instantaneous phases and a plurality of instantaneous envelope levels of a plurality of received signals, and

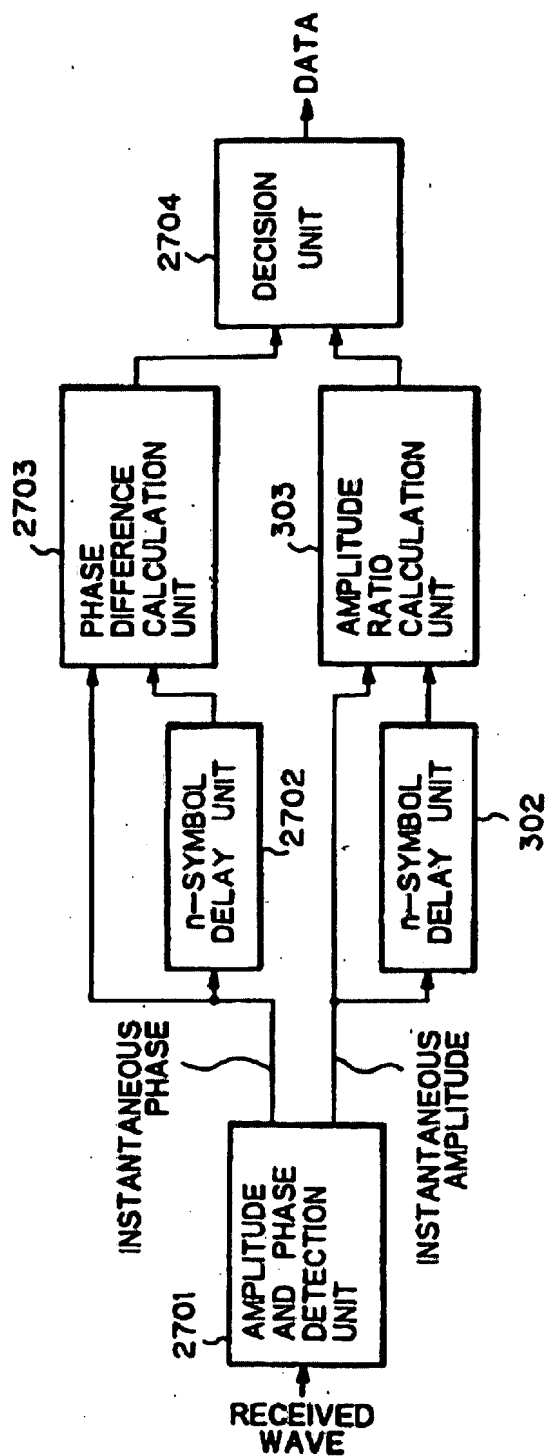
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that the demodulator further includes a summing unit for summing the plurality of the detected envelope levels to provide the instantaneous amplitude, and a selection unit for selecting one of the plurality of the detected instantaneous phases depending upon the plurality of the detected envelope levels so as to provide an improved instantaneous phase. Thus, diversity combining with the maximum gain is possible only by summing the detected amplitudes of the branches. “

The received signal comprises a TDM signal (see page 4, line19).

EP 0 738 064 A2

Fig. 27



Response to Arguments

5. Applicant's arguments filed 5/4/07 have been fully considered but they are not persuasive. Applicant argues that "No composite sequence is ever created" in Suzuki, rather "the separate envelope level and phase level are used to decide the transmitted code"
6. However, examiner disagrees with applicant's conclusion because Suzuki does teach such limitation see page 8, lines 8-26.

"According to the present invention, furthermore, a demodulator includes an amplitude and phase detection unit for detecting an instantaneous envelope level in a signal space and an instantaneous phase in the signal space of a received signal, a first n-symbol delay unit for providing an instantaneous phase at n symbols previously in time (n is a natural number), a phase difference calculation unit for calculating a phase difference between the detected instantaneous phase and the provided instantaneous phase n symbols previously, a second n-symbol delay unit for providing an instantaneous envelope level of the received signal at n symbols previously in time, an amplitude ratio calculation unit for calculating an amplitude ratio of an instantaneous amplitude in a signal space and an instantaneous amplitude in the signal space n symbols previously in time from the instantaneous envelope level and the instantaneous envelope level at n symbols previously, **and a decision unit for deciding a code transmitted in accordance with the calculated phase difference and the calculated amplitude ratio.**"

"It is preferred that the amplitude and phase detection unit includes a plurality of amplitude and phase detection circuits for detecting a plurality of instantaneous phases and a plurality of instantaneous envelope levels of a plurality of received signals, and that the demodulator further includes a summing unit for summing the plurality of the detected envelope levels to provide the instantaneous amplitude, and a selection unit for selecting one of the plurality of the detected instantaneous phases depending upon the plurality of the detected envelope levels so as to provide an improved instantaneous phase. Thus, diversity combining with the maximum gain is possible only by summing the detected amplitudes of the branches. "

Allowable Subject Matter

7. Claims 2-7,10-18 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Temesghen Ghebretinsae whose telephone number is 571-272-3017. The examiner can normally be reached on Monday-Friday from 8 to 6. The examiner can also be reached on alternate .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel, can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T.Ghebretinsae

7/13/07.

Temesghen Ghebretinsae
Primary Examiner
Art Unit 2611

TEMESGHEN GHEBRETINSAE
PRIMARY EXAMINER
7/13/07